

Appl. No. 09/764,561
Atty. Docket No. 8386
Amdt. dated July 14, 2004
Reply to Office Action of January 14, 2004
Customer No. 27752

REMARKS

Claims 1, 3-9, 12-15, 22-25 and 41 and 42 are pending in the present application. Claims 28-40 and Claim 43 have been withdrawn from consideration in view of a previous Restriction Requirement for which the Applicants elected an invention with traverse. No additional claim fees are believed necessary.

Claim 1 has been amended to more specifically characterize and define the present invention. Claim 1 has been amended by incorporating the subject matter wherein the liquid emulsifiable concentrate of a reactive agent is anhydrous. Support for this amendment is found in the Specification on page 4, lines 10-14.

Claim 43, previously added to the present application, has been withdrawn from consideration in view of a previous Restriction Requirement for which the Applicants elected an invention with traverse.

It is believed these changes do not involve any introduction of new matter. Consequently, entry of these changes is believed to be in order and is respectfully requested. Any additional claims fee due as a result of these amendments is charged to the Assignee's Deposit Account via the attached cover sheet.

Art Rejections

35 U.S.C. § 103(a)

Claims 1, 3-9, 12-15, 22-25 and 41 and 42 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Gough et al, U.S. 5,525,332, collectively "Gough", in view of Deppert et al, U.S. Patent 5,087,733, collectively "Deppert". The Examiner has asserted that it would have been obvious for one of skill in the art to use the teachings of Deppert within the teachings of Gough because both Deppert and Gough teach that similar effective conditioning results could be achieved and both teach that the claimed polymers are useful due to their chemical affinity to substrates including hair. The expected result would be an effective hair conditioning formulation for the treatment of hair. Applicants respectfully traverse this rejection.

Gough discloses a cosmetic composition, especially for providing a conditioning benefit to hair, incorporating an azalactone-functionalized copolymer consisting of vinyl azalactone and methacryloyl polymethylsiloxane monomers. Gough teaches preferred azalactone functionalized materials which are water soluble or soluble in water/alcohol, to enable compositions to be

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prepared as aqueous or aqueous/alcoholic solutions or emulsions. (Column 7, lines 49-54) or alternatively, the active materials may be soluble/dispersible in organic solvents only, e.g., alcohols, hydrocarbons, etc. to make them particularly suitable for formulation into mousse- or spray- type products (Column 7, lines 60-64). As the Examiner has kindly pointed out, Gough is silent as to a nucleophilic reactive group of thiol type reactive agents, as taught in the present invention.

Deppert discloses processes for conditioning human hair by treatment with selected sulfur containing quaternary ammonium compounds, compositions useful for such processes and novel quaternary compounds useful for the processes. The Examiner has further asserted that Deppert teaches a nucleophilic reactive group of thiol type reactive agents at Example IV, column 6, and such thiol reactive agents are used in conditioning of hair substrates and due to their molecular structure, the molecules are capable of forming covalent bonds with the sulfhydryl radicals of the hair (col. 9).

As now amended, the present invention discloses and claims the combination of a specific surfactant system comprising the combination of a C₈-C₁₆ alkyl ethoxylate with two to seven ethoxylates with a dispersing aide selected from one or more of a C₅-C₁₀ alcohol and further wherein the liquid emulsifiable concentrate of a reactive agent is anhydrous. In the present invention, it has been surprising found that this specific surfactant system enables the anhydrous liquid emulsifiable concentrate achieve the low interfacial tension self/spontaneous emulsification. Such low energy emulsification with minimal or no agitation by the consumer, e.g., by soft shaking of bottle or suitable container, is achieved via inclusion of specialized surfactants system with the specified dispersing aide within the liquid concentrate that achieve ultra-low interfacial tension. The reactive agent retains its chemical stability within the anhydrous formulation during the shelf life of the product.

Surprisingly, it has been discovered that the liquid emulsifiable concentrates of the present invention can achieve self emulsification even upon addition to a substantially thickened aqueous composition to produce a resulting homogenous and viscous emulsion with minimal agitation by the consumer, e.g., via gentle shaking of the bottle or suitable container. This is in marked contrast to conventional thickened emulsions which necessitate considerable energy input that can only be attained by employing high energy processing equipment within a laboratory or a manufacturing plant, e.g., a lightning mixer or agitated vessel. Accordingly, the liquid emulsifiable concentrates, which are anhydrous, of the present invention enable isolation upon

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storage for acceptable chemical shelf stability while still enabling emulsion delivery with minimal inconvenience to the consumer.

In response to Applicants' arguments that there is no suggestion to combine Gough with Deppert, the Examiner recognized that obviousness can only be established by combining or modifying the teachings or the prior art to produce the claimed invention where there is some teaching, suggestion or motivation to do so found either in the references themselves or in the knowledge of the skilled in the art. The Examiner has asserted that in the present application, Gough teaches a polymer with a silicone functional group (polymer of the claimed "electrophilic reactive group"); teaches surfactants (anionic, nonionic, amphoteric, and/or zwitterionic) and emulsifiers that are used to stabilize the emulsified particles are also taught. The compositions in Gough demonstrate enhanced deposition of the polymer by way of reaction if the functional group with the nucleophilic group is on the substrate. Gough is silent as to a nucleophilic reactive group of a thiol type reactive agent. Further, the Examiner asserts that Deppert teaches and was relied upon for the teaching of such a reactive agent as seen in Example IV. Such thiol reactive agents are used in conditioning of hair substrates. Due to their molecular structure, the molecules are capable of forming covalent bonds with the sulfhydryl radicals of the hair. Therefore, the Examiner has asserted that the prior art teaches a similar formulation comprising similar ingredients for a related purpose. Hence, the Examiner asserts that the instant invention remains obvious and unpatentable over the prior art.

Applicants kindly state that in order to establish a prima facie case of obviousness, the Examiner must show that (1) there is some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings, (2) there is a reasonable expectation of success, and (3) all of the limitations of the claims are taught or suggested in the prior art (M.P.E.P. § 2143).

1) None of the references establish a prima facie case of obviousness because they do not teach or suggest all of Applicants' claim limitations. In the present case, and with respect to Claims 1, 3-9, 12-15, 22-25 and 41 and 42, neither of the references teach the use of liquid emulsifiable concentrate of a reactive agent which is anhydrous, as the present application is now amended.

Specifically, Gough discusses the use of surfactants in the conventional sense within an aqueous medium such as "in the form of an emulsion, in which case an emulsifier is preferably included to stabilize the emulsified particles of the active (by definition means AQUEOUS), as is well known in the art, it may contain one or more surfactants..." (Column 9 lines 12-20). This

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paragraph is then followed by Gough's list of suitable anionic, nonionic, cationic and amphoteric surfactants. Therefore, Gough only teaches surfactants for use within an aqueous composition. Moreover, in Gough's non-aqueous examples (Examples 1-3) comprising toluene, no surfactants are included.

The Examiner has asserted that conventional additives including surfactants and emulsifying agents are included in Column 10. Applicants further point out that specifically, Deppert states that aqueous solutions are preferred, but the compositions may contain up to about 30% by weight of a water miscible lower alkanol. Deppert states that the additional excipients included surfactants and emulsifying agents. (Column 10, lines 39-48). All of the compositions exemplified by Deppert are aqueous (Examples V-VIII). Therefore, Deppert also only teaches surfactants for use within an aqueous composition.

Further, Applicants submit that Gough does not teach at all the specific combination of a C₈-C₁₆ ethoxylate with 2-7 ethoxylates with a dispersing aide selected from one or more of a C₅-10 alcohol. In fact, Gough doesn't really teach these ingredients at all: Gough limits the nonionic surfactant to C₈-C₁₈ ethoxylates with 6-30 ethoxylates (Column 9, lines 49-53) and the only mention Gough makes of alcohols is the use of "fatty alcohols" as conditioning agents (column 10, line 46) --> "fatty" implies C₁₂-C₂₀ as is known to one skilled in the art for alcohols derived from "fats".

2) The Examiner has not provided the requisite motivation to modify either the Gough reference or Deppert reference so as to obtain Applicants' invention. The Examiner has asserted that the prior art teaches a similar formulation comprising similar ingredients for a related purpose. However, as demonstrated above, Gough and Deppert do not teach similar formulation comprising similar ingredients for a related purpose. Neither Gough nor Deppert teach a liquid emulsifiable concentrate of a reactive agent which is anhydrous. In the present invention, the reactive agent retains its chemical stability within the anhydrous formulation during the shelf life of the product.

Both Gough and Deppert are directed toward the use of surfactants within an aqueous composition. One of skill in the art would not have been motivated or looked to Gough or Deppert when using an anhydrous liquid emulsifiable concentrate. Moreover, in Gough's non-aqueous examples (Examples 1-3) comprising toluene, no surfactants are included. Clearly one of skill in the art would not be motivated from Gough or Deppert to combine specified surfactants and a dispersing aide, as taught in the present invention, with an anhydrous liquid emulsifiable concentrate. Gough and Deppert teach surfactants in an aqueous based composition system.

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Unlike Applicants invention, none of the references recognize or are for a related purpose when compared to that for which the present invention i.e., the need for a specific surfactant system which enable the anhydrous liquid emulsifiable concentrate to achieve the low interfacial tension self/spontaneous emulsification. Thus, the references do not recognize the anhydrous liquid emulsifiable concentrates of the present invention which enable isolation upon storage for acceptable chemical shelf stability while still enabling delivery with minimal inconvenience to the. Applicants disclose a specified surfactant system in combination with a specified dispersing aide wherein Applicants recognize the interactions of the components of such a system.

There is no description in any of the references regarding the relationship between the combination of these specific materials of the present invention and the purpose or benefit of providing a solution to the problem for which the present invention has solved. Thus there is no motivation in the Gough et al reference to combine it with the Deppert reference and arrive at the benefit of the present invention. Further, there is no motivation in Gough to look to the teachings of Deppert and arrive at the unexpected benefit of the present invention.

In summary, neither Gough et al nor Deppert establish a *prima facie* case of obviousness because all of the limitations of the claims are not taught or suggested in the prior art. Secondly, there is no suggestion or motivation to modify the references, as none of the references, either alone or in combination, teach, recognize or are for a related purpose when compared to the purpose of the present invention i.e. low energy emulsification with minimal or no agitation by the consumer. Therefore, Applicants' contend that the claimed invention is unobvious and that the rejection should be withdrawn.

Conclusion

In light of the above remarks, it is requested that the Examiner reconsider and withdraw the rejection under 35 U.S.C 103(a). Early and favorable action in the case is respectfully requested.

Applicants have made an earnest effort to place their application in proper form and to distinguish the invention as now claimed from the applied references. In view of the foregoing, Applicants respectfully request reconsideration of this application, entry of the amendments presented herein, withdrawal of the rejections under 35 U.S.C § 103, and allowance of Claims 1, 3-9, 12-15, 22-25 and 41 and 42.

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Respectfully submitted,

Robert W. Glenn et al

By Linda M. Sivik
Linda M. Sivik
Agent for Applicant(s)
Registration No. 44,982
(513) 626-4122

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